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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,077	08/10/2001	Kristain John Sime	13183	7361

7590                    03/27/2003

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[REDACTED]

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
1714	J

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/928,077	SIME ET AL.
	Examiner Callie E. Shosho	Art Unit 1714
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>		
<b>Period for Reply</b> <b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>		
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>		
<b>Status</b>		
1) <input type="checkbox"/> Responsive to communication(s) filed on ____. 2a) <input type="checkbox"/> This action is FINAL.                  2b) <input checked="" type="checkbox"/> This action is non-final. 3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.		
<b>Disposition of Claims</b>		
4) <input checked="" type="checkbox"/> Claim(s) <u>1-31</u> is/are pending in the application. 4a) Of the above claim(s) ____ is/are withdrawn from consideration. 5) <input type="checkbox"/> Claim(s) ____ is/are allowed. 6) <input checked="" type="checkbox"/> Claim(s) <u>1-31</u> is/are rejected. 7) <input type="checkbox"/> Claim(s) ____ is/are objected to. 8) <input type="checkbox"/> Claim(s) ____ are subject to restriction and/or election requirement.		
<b>Application Papers</b>		
9) <input type="checkbox"/> The specification is objected to by the Examiner. 10) <input type="checkbox"/> The drawing(s) filed on ____ is/are: a) <input checked="" type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).		
11) <input type="checkbox"/> The proposed drawing correction filed on ____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.		
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.		
<b>Priority under 35 U.S.C. §§ 119 and 120</b>		
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All    b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. ____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.		
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.		
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.		
<b>Attachment(s)</b>		
1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> .		
4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.		

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 29 each the trademark/trade name Orient Oil Black. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph.

See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe colorant and, accordingly, the identification/description is indefinite.

### **Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 6-9, 12-16, 20-22, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 6,532,870) in view of Wong et al. (U.S. 6,319,310) and EP 105994.

Kato et al. disclose hot melt ink comprising 0.1-10% dye, 30-90% stearic acid, and 5-70% resin including butyral resin and polyester wherein the polyester is identical to flow additive

used in present invention. It is disclosed that the resin is used singly or in mixture of two or more kinds. There is also disclosed a method or printing onto substrate comprising heating to liquid the solid hot melt ink to a temperature of 90-130 °C, ejecting the liquid from printer, and allowing liquid to solidify (col.1, lines 62-67, col.2, lines 15-20, col.9, lines 4-7, 10-18, 37, and 53-55, col.10, lines 5, 10-15, and 36-39, col.13, lines 28-32, and col.15, lines 55-59).

The difference between Kato et al. and the present claimed invention is the requirement in the claims of (a) first plasticizer, i.e. aromatic hydrocarbon resin and (b) linear block copolymer.

With respect to difference (a), Wong et al., which is drawn to hot melt ink, disclose the use of 0.1-20% aromatic hydrocarbon plasticizer wherein the motivation for using such plasticizer is that the plasticizer enables the ink to maintain low viscosity without impairing the phase change behavior of the ink (col.17, lines 18-25 and 38-41).

With respect to difference (b), EP 105994, which is drawn to hot melt ink, discloses the use of 2-20% styrene-butadiene-styrene block copolymer in order to produce ink with good cohesive strength (page 16, lines 34-35 and page 17, lines 6-7).

Given that Kato et al., Wong et al., and EP 105994 disclose ink as presently claimed including block copolymer plasticizer and linear block copolymer identical to that presently claimed, it is clear that, upon solidifying the ink would intrinsically form elastic phase and crystalline phase.

In light of the motivation for using aromatic hydrocarbon plasticizer and linear block copolymer disclosed by Wong et al. and EP 105994 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer and linear block copolymer

in the ink of Kato et al. in order to produce ink with suitable viscosity for printing and good cohesive strength, and thereby arrive at the claimed invention.

6. Claims 1-5, 6-9, 12-17, 18, 20-22, 25-27, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 6,532,870) in view of Wong et al. (U.S. 6,319,310), EP 105994, and Scheibelhoffer et al. (U.S. 5,549,929).

Kato et al. disclose hot melt ink comprising 0.1-10% dye, 30-90% stearic acid, and 5-70% resin including butyral resin. It is disclosed that the resin is used singly or in mixture of two or more kinds. There is also disclosed a method of printing onto substrate comprising heating to liquid the solid hot melt ink to a temperature of 90-130 °C, ejecting the liquid from printer, and allowing liquid to solidify (col.1, lines 62-67, col.2, lines 15-20, col.9, lines 4-7, 10-18, 37, and 53-55, col.10, lines 5, 10-15, and 36-39, col.13, lines 28-32, and col.15, lines 55-59).

The difference between Kato et al. and the present claimed invention is the requirement in the claims of (a) first plasticizer, i.e. aromatic hydrocarbon resin, (b) linear block copolymer, and (c) flow additive.

With respect to difference (a), Wong et al., which is drawn to hot melt ink, disclose the use of 0.1-20% aromatic hydrocarbon plasticizer wherein the motivation for using such plasticizer is that the plasticizer enables the ink to maintain low viscosity without impairing the phase change behavior of the ink (col.17, lines 18-25 and 38-41).

With respect to difference (b), EP 105994, which is drawn to hot melt ink, discloses the use of 2-20% styrene-butadiene-styrene block copolymer in order to produce ink with good cohesive strength (page 16, lines 34-35 and page 17, lines 6-7).

With respect to claim 17, it is noted that EP 105994 disclose the use of 2% linear block copolymer while the claim requires 1% linear block copolymer.

It is apparent, however, that the instantly claimed amount of block copolymer and that taught by EP 105994 are so close to each other that the fact pattern is similar to the one in In re Woodruff, 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

In light of the case law cited above and given that there is only a “slight” difference between the amount of block copolymer disclosed by EP 105994 and the amount disclosed in the present claims and further given the fact that no criticality is disclosed in the present invention with respect to the amount of block copolymer, it therefore would have been obvious to one of ordinary skill in the art that the amount of block copolymer disclosed in the present claims is but an obvious variant of the amounts disclosed in EP 105994.

With respect to difference (c), Scheibelhoffer et al., which is drawn to ink composition, disclose the use of 0.1-10% flow additive such as fluorine containing copolymer in order to control rheology and flow of the ink (col.9, lines 55-57 and 60-63 and col.11, lines 18-19).

Given that Kato et al., Wong et al., EP 105994, and Scheibelhoffer et al. disclose ink as presently claimed including block copolymer plasticizer and linear block copolymer identical to

that presently claimed, it is clear that, upon solidifying the ink would intrinsically form elastic phase and crystalline phase.

In light of the motivation for using aromatic hydrocarbon plasticizer, linear block copolymer, and flow additive disclosed by Wong et al., EP 105994, and Scheibelhoffer et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer, linear block copolymer, and flow additive in the ink of Kato et al. in order to produce ink with suitable viscosity for printing and good cohesive strength, and thereby arrive at the claimed invention.

7. Claims 10 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Wong et al., EP 105994, and Scheibelhoffer et al. as applied to claims 1-5, 6-9, 11-17, 18, 20-22, 25-27, and 30-31 above, and further in view of Baker et al. (U.S. 6,093,235).

The difference between Kato et al. in view of Wong et al., EP 105994, and Scheibelhoffer et al. and the present claimed invention is the requirement in the claims of styrene-isoprene-styrene block copolymer.

Baker et al., which is drawn to hot melt ink, disclose the use of styrene-isoprene-styrene block copolymer in order to control the viscosity of the ink. Baker et al. also disclose the equivalence and interchangeability of styrene-isoprene-styrene block copolymer with styrene-butadiene-styrene block copolymer disclosed by Kato et al. (col.3, lines 36-38 and 54-55).

In light of the motivation for using styrene-isoprene-styrene block copolymer disclosed by Baker et al. as described above, it therefore would have been obvious to one of ordinary skill

in the art to use such block copolymer in the ink of Kato et al. in order to produce ink with suitable viscosity, and thereby arrive at the claimed invention.

8. Claims 11 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. in view of Wong et al., EP 105994, and Scheibelhoffer et al. as applied to claims 1-5, 6-9, 11-17, 18, 20-22, 25-27, and 30-31 above, and further in view of Takizawa et al. (U.S. 5,680,165) and Howald (U.S. 6,153,667).

The difference between Kato et al. in view of Wong et al., EP 105994, and Scheibelhoffer et al. and the present claimed invention is the requirement in the present claims of specific type of colorant.

Kato et al. disclose the use of oil-soluble dye.

Takizawa et al., which is drawn to hot melt ink, disclose the use of oil-soluble dye such as Solvent Black 3 (col.10, lines 63-65, col.11, lines 60-63, and col.12, lines 12) which is also known, as found in Howald (col.5, lines 20-21), as Orient Oil Black.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use Orient Oil Black as the colorant in Kato et al., and thereby arrive at the claimed invention.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (U.S. 6,532,870) in view of EP 105994.

Kato et al. disclose hot melt ink comprising 0.1-10% dye, 30-90% stearic acid, and 5-70% resin including butyral resin, polyester, and polyamide wherein it is disclosed that the resin

is used singly or in mixture of two or more kinds. There is also disclosed a method or printing onto substrate comprising heating to liquid the solid hot melt ink to a temperature of 90-130 °C, ejecting the liquid from printer, and allowing liquid to solidify (col.1, lines 62-67, col.2, lines 15-20, col.9, lines 4-7, 10-18, 37, and 53-55, col.10, lines 5, 10-15, and 36-39, col.13, lines 28-32, and col.15, lines 55-59).

The difference between Kato et al. and the present claimed invention is the requirement in the claims of linear block copolymer.

EP 105994, which is drawn to hot melt ink, discloses the use of styrene-butadiene-styrene block copolymer in order to produce ink with good cohesive strength (page 16, lines 34-35 and page 17, lines 6-7).

In light of the motivation for using linear block copolymer disclosed by EP 105994 described above, it therefore would have been obvious to one of ordinary skill in the art to use such linear block copolymer in the ink of Kato et al. in order to produce ink with good cohesive strength, and thereby arrive at the claimed invention.

10. Claims 1-10, 12-22, and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (U.S. 6,093,239) in view of Wong et al. (U.S. 6,319,310), Kato et al. (U.S. 6,532,870), and Scheibelhoffer et al. (U.S. 5,549,929).

Baker et al. disclose hot melt ink comprising less than 80% stearic acid, less than 80% styrene-butadiene-styrene block copolymer or styrene-isoprene-styrene block copolymer, and 3-6% colorant. There is also disclosed a method or printing onto substrate comprising heating to liquid the solid hot melt ink to a temperature of 50-150 °C, ejecting the liquid from printer, and

allowing liquid to solidify (col.1, lines 9 and 49-52, col.2, lines 47-48, col.3, lines 21-25 and 52-55, col.4, lines 2-3, and col.5, lines 5-19).

The difference between Baker et al. and the present claimed invention is the requirement in the claims of (a) first plasticizer, i.e. aromatic hydrocarbon resin, (b) block copolymer plasticizer, and (c) flow additive.

With respect to difference (a), Wong et al., which is drawn to hot melt ink, disclose the use of 0.1-20% aromatic hydrocarbon plasticizer wherein the motivation for using such plasticizer is that the plasticizer enables the ink to maintain low viscosity without impairing the phase change behavior of the ink (col.17, lines 18-25 and 38-41).

With respect to difference (b), Kato et al., which is drawn to hot melt ink, disclose the use of 5-70% butyral resin in order to enhance adhesion of ink to paper and control viscosity (col.9, lines 57-61 and col.10, line 8).

With respect to difference (c), Scheibelhoffer et al., which is drawn to ink composition, disclose the use of 0.1-10% flow additive such as fluorine containing copolymer in order to control rheology and flow of the ink (col.9, lines 55-57 and 60-63 and col.11, lines 18-19).

Given that Kato et al., Wong et al., Kato et al., and Scheibelhoffer et al. disclose ink as presently claimed including block copolymer plasticizer and linear block copolymer identical to that presently claimed, it is clear that, upon solidifying the ink would intrinsically form elastic phase and crystalline phase.

In light of the motivation for using aromatic hydrocarbon plasticizer, block copolymer plasticizer, and flow additive disclosed by Wong et al., Kato et al., and Scheibelhoffer et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use

such aromatic hydrocarbon, butyral resin, and flow additive in the ink of Baker et al. in order to produce ink with suitable viscosity for printing and good cohesive strength, and thereby arrive at the claimed invention.

11. Claims 1-9, 12-16, 18-23, 25-28, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker et al. (U.S.6,093,239) in view of Wong et al. (U.S. 6,319,310), EP 105994, and Scheibelhoffer et al. (U.S. 5,549,929).

Baker et al. disclose hot melt ink comprising less than 80% stearic acid, less than 80% polyvinyl butyral, and 3-6% colorant. There is also disclosed a method or printing onto substrate comprising heating to liquid the solid hot melt ink to a temperature of 50-150 °C, ejecting the liquid from printer, and allowing liquid to solidify (col.1, lines 9 and 49-52, col.2, lines 47-48, col.3, lines 21-25 and 52-55, col.4, lines 2-3, and col.5, lines 5-19).

The difference between Baker et al. and the present claimed invention is the requirement in the claims of first plasticizer, i.e. aromatic hydrocarbon resin, (b) linear block copolymer, and (c) flow additive.

With respect to difference (a), Wong et al., which is drawn to hot melt ink, disclose the use of 0.1-20% aromatic hydrocarbon plasticizer wherein the motivation for using such plasticizer is that the plasticizer enables the ink to maintain low viscosity without impairing the phase change behavior of the ink (col.17, lines 18-25 and 38-41).

With respect to difference (b), EP 105994, which is drawn to hot melt ink, discloses the use of 2-20% styrene-butadiene-styrene block copolymer in order to produce ink with good cohesive strength (page 16, lines 34-35 and page 17, lines 6-7).

With respect to claim 17, it is noted that EP 105994 disclose the use of 2% linear block copolymer while the claim requires 1% linear block copolymer.

It is apparent, however, that the instantly claimed amount of block copolymer and that taught by EP 105994 are so close to each other that the fact pattern is similar to the one in In re Woodruff, 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a "slight" difference in the ranges the court held that such a difference did not "render the claims patentable" or, alternatively, that "a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties".

In light of the case law cited above and given that there is only a "slight" difference between the amount of block copolymer disclosed by EP 105994 and the amount disclosed in the present claims and further given the fact that no criticality is disclosed in the present invention with respect to the amount of block copolymer, it therefore would have been obvious to one of ordinary skill in the art that the amount of block copolymer disclosed in the present claims is but an obvious variant of the amounts disclosed in EP 105994.

With respect to difference (c), Scheibelhoffer et al., which is drawn to ink composition, disclose the use of 0.1-10% flow additive such as fluorine containing copolymer in order to control rheology and flow of the ink.

Given that Baker et al., Wong et al., EP 105994, and Scheibelhoffer et al. disclose ink as presently claimed including block copolymer plasticizer and linear block copolymer identical to

that presently claimed, it is clear that, upon solidifying the ink would intrinsically form elastic phase and crystalline phase.

In light of the motivation for using aromatic hydrocarbon plasticizer, linear block copolymer, and flow additive disclosed by Wong et al., EP 105994, and Scheibelhoffer et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such aromatic hydrocarbon plasticizer, polyvinyl butyral resin, and flow additive in the ink of Baker et al. in order to produce ink with suitable viscosity and rheology for printing and good cohesive strength, and thereby arrive at the claimed invention.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

EP 805192 discloses hot melt ink comprising triblock copolymer, dye, and stearic acid, however, there is no disclosure of first plasticizer or block copolymer plasticizer as presently claimed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shoso whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*Callie Shosho*

Callie E. Shosho  
Examiner  
Art Unit 1714

CS  
March 23, 2003